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Jenny Larsen — 10-4-05

Jenny Larsen — Date

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

H0006457-5722 **PATENT**

In re the Application of:	
CRAIG L. SCHIMMEL	
Serial No.: 10/797,369	Art Unit: 2676
Filed: March 9, 2004	Examiner: RAHMJOO, Manucher
For: REAL TIME CONTOUR LINE GENERATION	

APPELLANT'S APPEAL BRIEF

To: Mail Stop Appeal Brief-Patents
Commissioner of Patents
PO Box 1450
Alexandria, VA 22313-1450

Honorable Assistant Commissioner for Patents:

As provided in 37 C.F.R. § 1.192, Appellant files this Appeal Brief in triplicate in connection with the above-identified application with the Board of Patent Appeals and Interferences ("Board").

The requisite government fees provided for in 37 C.F.R. § 1.17(c) for a large entity in the amount of $500.00 for filing this Appeal Brief are hereby authorized to be withdrawn from the Deposit Account Number 01-1125 for Honeywell International, Inc.

10/06/2005 TBESHAH1 00000042 011125 10797369
01 FC:1402 500.00 DA

(1) Real Party in Interest

The real party in interest is Honeywell International, Inc.

(2) Related Appeals and Interferences

No other appeals or interferences will directly affect, be directly affected by, or have a bearing on the Board's decision in this appeal.

(3) Status of Claims

Claims 1-18 are pending in the present application and have been finally rejected and are the basis for this appeal. The pending claims are attached as Appendix A.

(4) Status of Amendments

The first amendment dated May 10, 2005 was entered. The amendment dated July 12, 2005, was entered; however no claims were amended. The affidavit of Craig L. Schimmel, submitted on July 12, 2005, was submitted; however the Advisory Action of May 4, 2004, does not indicate whether it was entered. The latest version of the amended claims was entered on May 10, 2005. There were no amendments made subsequent to the final rejection. The claims from the May 10, 2005, amendment are reflected in Appendix A.

(5) Summary of the Invention

The present invention is a method and apparatus for generating a contour line by providing real time generation of a contour plot image of contour lines without requiring either preprocessed contour line images or specific electronic hardware. The present invention maintains an ongoing current contour line state, which enables fast determination of contour line points without explicit comparison of multiple neighboring elevation points. The contour line state comprises data points from the row and column data. The method of comparing multiple neighboring elevation points is the prior art method of generating contour lines.

Claim 1 is the representative independent claim for this appeal. The claim is set forth and is supported by the cited page numbers and drawing elements as indicated in parentheses.

A method of generating contour lines from elevation data, the method comprising the steps of:

a) selecting a first data point from the elevation data (page 6, lines 12-13, elements: input data **104** and first data row **114**);

b) setting row and column data to an initial contour value, the row and column data comprising a first state (page 6, lines 4-8 and elements: input data **104** and first data row **114**, column base elevation **100** and row base elevation **102**)

c) comparing a second data point with the first state for determining an existence of a contour line depending on a result from the step of comparing (page 6, lines 13-16 and lines 30-32, elements: column base elevation **100** and row base elevation **102**, input data **104**, **158**, elevation data point **108** and contour interval **148**);

d) updating the first state to a next state, wherein the next state comprises a next row and column data, if the contour line exists (page 6, lines 1117-28 and page 6, line 34 through page 7, line 2, page 7 lines 12-15, elements: column base elevation **100** and row base elevation **102** and setting the state **162**);

e) creating a portion of a contour line image, if the contour line exists (page 6, lines 32-33, page 7, lines 16-17, elements: pixel output **106**, row **114**, column **110**, elevation point **112**, row base elevation **166** and pixel memory **106**);

f) proceeding to a next data point (page 6, lines 12-14, elements: row **114**, data input **104**); and

g) repeating steps b) through f) for a next column or row (page 6, lines 12-14).

(6) Issues

WHETHER CLAIMS 1-18 ARE UNPATENTABLE UNDER 35 USC §102(b) AS BEING ANTICIPATED BY BECKWITH JR., ET AL.

(7) Grouping of Claims

All of the claims, claims 1-18, stand or fall together.

(8) Arguments

This appeal involves a single issue regarding the term "state". It is the Applicant's position that the Examiner is imputing a meaning of the term that is neither stated or implied in Beckwith Jr., et al., and also interpreting a meaning of the term well beyond the definition of the term as specifically stated in the specification.

First of all, it should be noted that in claim 1, the term state is defined as row and column data. "Setting row and column data to an initial contour value, the row and column data comprising a first state..." See part b) of claim 1. In addition, claim 1 states in part d) "updating the first state to a next state, wherein the next state comprises a next row and column data, if the contour line exists..." The applicant throughout the specification specifically defined the term "state" as row and column data. In addition, the specification defined the term "state" as explicitly not comparing multiple neighboring elevation points. See specification on page 3, Lines 18-22 (Summary of the Invention). Further, the specification specifically stated that the row and column base elevation values respectively maintain a current contour line state. See specification on page 5, lines 24-29. Finally, on page 7, lines 24-29, the Applicant defined state as follows: "By maintaining the two dimensional base elevation values, the row base elevation **102** and the column base elevation set **100**, the present invention eliminates the need to sample multiple neighboring data points as is performed by all present state of the art methods. The two base elevation elements combine to maintain a continuously updated state of the elevation data scan". Thus, the Applicant continuously used the same definition of the term.

A fundamental principle contained in 35USC §112, second paragraph is that applicants are their own lexicographers. They can define in the claims what they regard as their invention essentially in whatever terms they choose so long as any special meaning assigned to a term is clearly set forth in the specification. See MPEP §2111.01. Applicant may use functional language, alternative expressions, negative limitations, or any style of expression or format of claim which makes clear the boundaries of the subject matter for which protection is sought. As noted by the court in *In re Swinehart*, 439 F.2d 210, 160 USPQ 226 (CCPA 1971), a claim may not be rejected solely because of the type of language used to define the subject matter for which patent protection is sought. Thus it is abundantly clear that the term "state" as used in the claim means row and column data. The claim specifically requires a first state and updating the first state to a next state. Beckwith Jr., et al., fails to teach or imply these features. Further, the boundaries of the claim exclude the prior art method as taught by Beckwith Jr., et al. In the Background Art section of the patent application, the Applicant on page 2, lines 4-15, describes the prior art method of using neighboring data points and an algorithm to create a contour line. This is exactly what Beckwith Jr., et al., teaches.

A statement by an applicant during prosecution identifying the work of another as "prior art" is an admission that work is available as prior art against the claims, regardless of whether the admitted prior art would otherwise qualify as prior art under the statutory categories of 35 U.S.C. 102. *Riverwood Int'l Corp. v. R.A. Jones & Co.*, 324 F.3d 1346, 1354, 66 USPQ2d 1331, 1337 (Fed Cir. 2003). Where the specification identifies work done by another as "prior art," the subject matter so identified is treated as admitted prior art. *In re, Nomiya*, 509 F.2d 566, 571, 184 USPQ 607, 611 (CCPA 1975) (holding applicant's labeling of two figures in the application drawings as "prior art" to be an admission that what was pictured was prior art relative to applicant's improvement). Thus, the specific definition by the applicant, as his own lexicographer, of what the term includes and the specific definition of what the term does not include makes the rejections erroneous.

There were some specific rejections made by the Examiner to elements in independent claim 1 that were also traversed in the office actions. The Examiner stated on page 2 of the final office action that Beckwith Jr., et al., teaches "b) setting row and column data to an initial contour value, the row and column comprising a first state". The contour table referred to by Examiner in Beckwith Jr., et al., at column 17 rows 54-55 contains "preprocessed" information. To quote, Beckwith Jr., et al., at column 17 rows 24-34 states "A contour table is introduced ... containing pertinent shades of gray and contour line data as preprocessed information...". Preprocessed data does not represent a state as specifically defined in the claims or in the specification, to be updated during processing of source elevation data. Rather, as described in Beckwith Jr., et al., column 17 rows 29-33, it is a table which is indexed into based on the incoming source elevation data. It is not an updated processing state (next row and column data), as is specifically described and claimed in the present invention.

Additionally, Beckwith Jr., et al., column 17 rows 45-50, clearly state that the contour table values are only updated when new visual requirements are selected. That is, when a different contour interval or shading value is selected by the external user. This differs greatly from a processing state as described in the present invention. In the present invention, the row and column data represent the processing state which is updated during the course of processing a set of elevation data (see feature d) of claim 1). This state is given an initial value (see feature b) of claim 1) which represents a first state, where the state will change during the course of processing a set of elevation data. The table described in Beckwith Jr., et al., as demonstrated above, is given a value which does not change during the course of processing, and is therefore not a state, nor an updated state, with regard to the processing of the elevation data set.

The second feature in claim 1 the Applicant traversed in the final office action was the statement that Beckwith Jr., et al., teaches "c) comparing a second data point with the first state for determining an existence of a contour line depending on a result from the step of comparing". Beckwith Jr., et al., at column 17 rows 3-5, compares two

adjacent data points, "Are any two adjacent data points located in different contour intervals?" In this instance, Beckwith is teaching the comparison of neighboring data points as is specifically defined as the prior art in the present application. This differs from the present invention, which compares a data point with the current processing state, where the processing state is identified as the row and column data (see feature c) of claim 1). The state contained in the row and column of the present invention should not be confused with the input elevation data itself, which happens to be arranged in a row/column format. As stated in claim 1 c), the present invention compares a data point, from the input elevation data, with the processing state to determine the presence of a contour line. Furthermore, the process of Beckwith Jr., et al., "Are any two adjacent points ..." necessarily requires the comparison of a data point with its 4 neighbors. Each interior data point has 4 neighbors (above, below, left, right); therefore comparison of adjacencies requires 4 comparisons. Beckwith Jr., et al., states this in column 16 rows 49-50. This contrasts with the present invention which compares a data point only with the current state, not with adjacent data points, as stated in claim 1 c). Therefore, the present invention's method of comparing a data point against a first state differs from Beckwith Jr., et al.'s comparison of a data point with adjacent data points.

Another feature in the final rejection of claim 1 that was traversed was the statement that Beckwith Jr., et al., teaches "d) updating the first state to a next state, wherein the next state comprises a next row and column data if the contour line exists". The rejection refers to Beckwith Jr., et al.'s column 17 rows 15-21. The referenced section of Beckwith Jr., et al., describes generating a signal for the purposes of displaying a portion of the contour line on the output device. The method used in Beckwith Jr., et al., to display a point once a contour has been found is moot with regard to the process of determining if a contour exists. The referenced section does not state or suggest that any processing state has been changed. In contrast, the present invention maintains and updates the processing state as a method of determining if a contour line exists. The state maintained in the present invention is named the row and column data in claim 1, and contains the current elevation level achieved. From claim 1

d), this processing state is updated every time a contour line is found. Beckwith Jr., et al., in column 17 rows 38-40, also offered as evidence of Beckwith Jr., et al., teaching the storing of a next state. This section of Beckwith Jr., et al., clearly states the contour table "outputs", not the contour table itself, are updated and stored. That is, after determining that a contour exists, Beckwith Jr., et al., stores the result (is there a contour). This differs from the present invention, which stores the processing state, which is used to determine if there is a contour line.

To support these contentions, the Applicant submitted an affidavit of the inventor, Craig Schimmel, an expert in the art. The Examiner apparently ignored or disregarded the affidavit. "It is the responsibility of the primary examiner to personally review and decide whether affidavits or declarations submitted under 35 USC 1.132 for the purpose of traversing ground of rejection are responsive to the rejection and present sufficient facts to overcome the rejection." MPEP 716. A response was filed within the required two month period, therefore the Examiner was required to consider the affidavit. MPEP 706(f). This is especially true when the affidavit contradicts the opinion of the examiner and sets out specific reasons why the Examiner's opinion as to patentablity is erroneous. Merely ignoring the affidavit evidence without any explanation seems improper.

Applicant respectfully urges that the structure of the invention as claimed by Applicant differs materially from the structure disclosed in the reference cited by the Examiner. Further, the structural elements of the claimed invention do not cooperate as disclosed in the reference. There is no teaching or suggestion in the reference to support the notion that the invention is anticipated by reference cited by the Examiner in the Final Office Action.

Conclusion

In view of the foregoing, Applicant respectfully requests that the Board of Patent Appeals and Interferences overrule the Final Rejection of Claims 1-18 over the cited art, and hold that Appellant's Claims are allowable over the reference.

(9) Appendix

As previously indicated, an Appendix containing a copy of the claims involved in this appeal is attached as Appendix A.

Respectfully submitted,

Dennis F. Armijo, Reg. No. 34,116

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APPENDIX A
to Appeal Brief of Appellant

CLAIMS

1. A method of generating contour lines from elevation data, the method comprising the steps of:

b) selecting a first data point from the elevation data;

b) setting row and column data to an initial contour value, the row and column data comprising a first state;

c) comparing a second data point with the first state for determining an existence of a contour line depending on a result from the step of comparing;

d) updating the first state to a next state, wherein the next state comprises a next row and column data, if the contour line exists;

e) creating a portion of a contour line image, if the contour line exists;

f) proceeding to a next data point; and

g) repeating steps b) through f) for a next column or row.

2. The method of claim 1 wherein the step of proceeding comprises proceeding in a predetermined direction.

3. The invention of claim 2 wherein the step of proceeding in a predetermined direction comprises proceeding in predetermined row and column directions.

4. The method of claim 1 further comprising the step of selecting a contour line interval.

5. The method of claim 1 further comprising anti-aliasing the contour line image.

6. The method of claim 1 wherein the step of updating comprises determining if an elevation point row and column data exceeds a current row or column base elevation by a value greater than a contour interval.

7. The method of claim 1 wherein the step of updating comprises storing the next state in a memory.

8. The method of claim 7 wherein the step of storing comprises storing the row and column base elevation.

9. The method of claim 1 wherein the step of creating comprises drawing the portion of the contour line image.

10. The method of claim 9 wherein the step of drawing comprises displaying the portion of the contour line image.

11. The method of claim 1 wherein the state of creating and the step of repeating comprises creating an entire contour line image.

12. A method of transforming input elevation data into a real-time contour plot image, the method comprising the steps of:

a) selecting an ordering sequence;

b) selecting a contour line interval;

c) determining initial row and column base elevation values;

d) selecting a first data point;

e) determining whether a contour line point has been detected by comparing the row base elevation value or column base elevation value plus the contour interval to the elevation data;

f) drawing a portion of a contour plot image;

g) updating the row and column elevation values to a highest contour interval multiple less than a elevation data point;

h) moving to a next data point; and

i) repeating steps e) through h).

13. The method of claim 12 wherein the step of determining initial row and column base elevation values comprises selecting a contour elevation closest to but not exceeding the first elevation value in the row.

14. The method of claim 12 wherein the step of drawing and the step of repeating comprises drawing an entire contour line image.

15. An apparatus for generating contour lines from row and column data, the apparatus comprising:

a first data point from the row and column data comprising a first state;

a means for comparing a second data point with the first state for determining an existence of a contour line depending on a result from the means for comparing;

a means for updating the first state to a next state, if the contour line exists;

a means for creating a portion of a contour line image, if the contour line exists;

a next data point for comparing with the next state by the means for comparing, the next state comprising a next row and column data; and

a means for drawing an entire contour line image from a plurality of portions of contour line images created by the means for creating.

16. The apparatus of claim 15 wherein said means for creating comprises a display.

17. The apparatus of claim 15 further comprising memory for storing the next state.

18. The apparatus of claim 15 further comprising a means for anti-aliasing the entire contour line image.

PTO/SB/17 (12-04v2)
Approved for use through 07/31/2006. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Effective on 12/08/2004.
Fees pursuant to the Consolidated Appropriations Act, 2005 (H.R. 4818).

FEE TRANSMITTAL For FY 2005

☐ Applicant claims small entity status. See 37 CFR 1.27

TOTAL AMOUNT OF PAYMENT ($) 500.00

Complete if Known	
Application Number	10/797,369
Filing Date	March 9, 2004
First Named Inventor	Craig L. Schimmel
Examiner Name	RAHMJOO, Manucher
Art Unit	2676
Attorney Docket No.	H0006457-5722

METHOD OF PAYMENT (check all that apply)

☐ Check ☐ Credit Card ☐ Money Order ☐ None ☐ Other (please identify): _____

☑ Deposit Account Deposit Account Number: 01-1125 Deposit Account Name: Honeywell International Inc.

For the above-identified deposit account, the Director is hereby authorized to: (check all that apply)

☑ Charge fee(s) indicated below ☐ Charge fee(s) indicated below, **except for the filing fee**

☐ Charge any additional fee(s) or underpayments of fee(s) under 37 CFR 1.16 and 1.17 ☐ Credit any overpayments

WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.

FEE CALCULATION

1. BASIC FILING, SEARCH, AND EXAMINATION FEES

	FILING FEES		SEARCH FEES		EXAMINATION FEES		
		Small Entity		Small Entity		Small Entity	
Application Type	Fee ($)	Fee ($)	Fee ($)	Fee ($)	Fee ($)	Fee ($)	Fees Paid ($)
Utility	300	150	500	250	200	100	
Design	200	100	100	50	130	65	
Plant	200	100	300	150	160	80	
Reissue	300	150	500	250	600	300	
Provisional	200	100	0	0	0	0	

2. EXCESS CLAIM FEES

Fee Description	Fee ($)	Small Entity Fee ($)
Each claim over 20 (including Reissues)	50	25
Each independent claim over 3 (including Reissues)	200	100
Multiple dependent claims	360	180

Total Claims		Extra Claims		Fee ($)		Fee Paid ($)
_____	- 20 or HP =	_____	x	_____	=	_____

HP = highest number of total claims paid for, if greater than 20.

Indep. Claims		Extra Claims		Fee ($)		Fee Paid ($)
_____	- 3 or HP =	_____	x	_____	=	_____

HP = highest number of independent claims paid for, if greater than 3.

Multiple Dependent Claims	
Fee ($)	Fee Paid ($)
_____	_____

3. APPLICATION SIZE FEE

If the specification and drawings exceed 100 sheets of paper (excluding electronically filed sequence or computer listings under 37 CFR 1.52(e)), the application size fee due is $250 ($125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).

Total Sheets		Extra Sheets		Number of each additional 50 or fraction thereof		Fee ($)		Fee Paid ($)
_____	- 100 =	_____	/ 50 =	_____	(round **up** to a whole number) x	_____	=	_____

4. OTHER FEE(S)

	Fees Paid ($)
Non-English Specification, $130 fee (no small entity discount)	
Other (e.g., late filing surcharge): Fee for Appeal Brief (37 C.F.R. Sec. 1.17(c))	500.00

SUBMITTED BY

Signature		Registration No. (Attorney/Agent) 34,116	Telephone 505-899-0269
Name (Print/Type)	Dennis F. Armijo		Date October 4, 2005